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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,240	12/11/2003	Michael A. Fetcenko	HS-126	2800

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ENERGY CONVERSION DEVICES, INC.
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EXAMINER	
ROE, JESSEE RANDALL	
ART UNIT	PAPER NUMBER
1742	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/735,240	FETCENKO ET AL.	
	Examiner	Art Unit	
	Jessee Roe	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 13-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 13-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

Claims 1-9 and 13-22 remain for examination wherein claims 1 and 6 are amended and claims 10-12 are canceled.

Terminal Disclaimer

The terminal disclaimer filed on 24 October 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 10/733,702 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Status of Previous Rejections

The previous rejection of claims 1-3 and 6-9 under 35 U.S.C. 102(b) as being anticipated by Das et al. (US 4,765,954) is withdrawn in light of the Applicant's arguments filed 24 October 2006. The previous rejection of claims 1-2 and 6-9 under 35 U.S.C. 102(b) as being anticipated by Sauerwald (US 2,228,781) is withdrawn in light of the Applicant's arguments filed 24 October 2006. The previous rejection of claims 1 and 6-9 under 35 U.S.C. 102(e) as being anticipated Fetcenko et al. (US 6,830,725) is withdrawn in light of the Applicant's amendments to the claims filed 24 October 2006.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-5, 13-15 and 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Welter et al. (US 4,613,362).

Claims 1-2, 4-5, 13-15 and 17-22 are rejected on the same grounds as stated in the Office Action of 24 April 2006.

In regards to the limitation of a "hydrogen catalyst, wherein said hydrogen desorption catalyst is insoluble in said magnesium-based hydrogen storage alloy and is in the form of a continuous or semi-continuous layer of catalytic material on the surface of said magnesium or magnesium-based hydrogen storage alloy which is in bulk or particulate form: alone or in combination with discrete dispersed regions of catalytic material in the bulk of said magnesium or magnesium-based hydrogen storage alloy", Welter et al. ('362) teach a magnesium-based hydrogen storage alloy with magnesium granulated particles with iron (col. 2, lines 12-45). Fine iron would be interspersed throughout the magnesium (col. 2, lines 12-45). The iron would be homogeneously and either semi-continuously or continuously distributed on the surface (col. 3, lines 1-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 5 and 13-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al. (Hydrogen storage properties in nano-structured magnesium- and carbon-related materials).

In regards to claims 1, 5, 13 and 16, Fujii et al. disclose a magnesium-based hydrogen storage alloy that would be a desorption catalyst would be in the form of bulk magnesium (pg. 77, col. 2-pg 78 col. 1). The magnesium-based alloy would have a palladium film that would be as thin as 10 nm (which would be about 100 angstroms thick) (pg. 79, col. 1). Fujii et al. does not specify that the palladium film would be semi-continuous or continuous. However, one of ordinary skill in the art would expect that a film of at least semi-continuous nature would be within the scope of this disclosure because the film would be formed by sputtering or evaporation and Fujii et al. specify that the structure and thickness of the film would be easy to control (pg. 78, col. 2).

The Examiner notes that the thickness of the palladium film disclosed by Fujii et al. overlaps with the thickness of the layer of catalytic material of the claimed invention. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed palladium thickness over the thickness of Fujii et al. because Fujii et al. teach the same utility (magnesium-based hydrogen storage materials) throughout the whole disclosed range.

In regards to claim 2, Fujii et al. discloses that bulk form would contain essentially all magnesium (pg. 77, col. 2).

In regards to claims 14-15 and 17-22, the Examiner asserts that the limitations of

claims 14-15 and 17-22 are product-by-process limitations. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product of claims 14-15 and 17-22 is the same as the product of Fujii et al. because Fujii et al. would comprise at least a semi-continuous layer of catalytic material on the surface of the magnesium hydrogen storage alloy which is in bulk form. See MPEP 2113.

Claims 1, 3-9, 13-15 and 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oelerich et al. (Metal oxides as catalysts for improved hydrogen sorption in nanocrystalline Mg-based materials).

In regards to claims 1, 3-5 and 13, Oelerich et al. disclose a magnesium-based hydrogen storage alloy that would be a desorption catalyst would be in the form of particulates (ball-milled to form powder) (pg. 237, col. 2). The magnesium-based storage alloy would have a palladium, nickel, or iron surface. Oelerich et al. also disclose ball milling the magnesium-based alloy with aluminum, iron, vanadium, titanium, manganese, copper, nickel and scandium and that titanium, vanadium, manganese, iron and nickel would accelerate hydrogen sorption kinetics (pg. 237, col. 2). Oelerich et al. does not specify that the surface would be semi-continuous or continuous. However, one of ordinary skill in the art would expect at least a semi-continuous layer because sorption reaction kinetics would be sensitive to the surface composition of the magnesium-based alloy otherwise.

In regards to claim 6, the Examiner asserts that ball milling the magnesium-based alloy with transition metals such as aluminum, iron, vanadium, titanium,

manganese, copper, nickel and scandium would create discrete dispersed catalytic material in the magnesium-based storage alloy.

In regards to claims 7-9, 14-15 and 17-22, the Examiner asserts that the limitations of claims 7-9, 14-15, and 17-22 are product-by-process limitations. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product of claims 7-9, 14-15 and 17-22 is the same as the product of Oelerich et al. because Oelerich et al. would comprise at least a semi-continuous layer of catalytic material on the surface of the magnesium hydrogen storage alloy which is in bulk form. See MPEP 2113.

Response to Arguments

Applicant's arguments filed 10 October 2006 have been fully considered but are not persuasive.

In response to the Applicant's arguments that homogenously distributed over the surface of the granulate particles does not mean continuous or semi-continuous in the Welter et al. ('362) reference. The data shown in Figure 1 of the Welter et al. ('362) reference regarding the sorption kinetics would rely upon the surface being uniform. Welter et al. ('362) disclose a semi-continuous or continuous granulate formation for the iron and the iron would be homogeneously distributed on the surface (col. 3, lines 1-15). Therefore, the iron on the surface would be homogenous and have a semi-continuous or continuous granulate formation.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP §706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JR

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